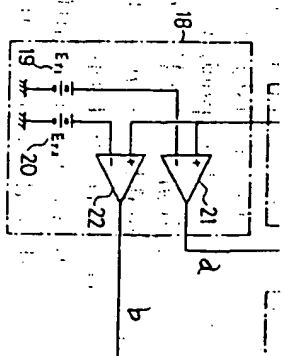


changes gently by the function of the input smoothing capacitor 17 even when an AC input voltage drops steeply. Therefore, assuming that first and second threshold values E_{r1} and E_{r2} are constant, a generating timing between an oscillation stoppage control signal and a power failure detecting signal is accelerated when a load is light, and is decelerated when it is weighty. Also, it is decelerated as the input AC voltage is high just before the generation of the power failure, and is accelerated as it is low. By setting the threshold values E_{r1} and E_{r2} appropriately within the range of the voltage possible to guarantee the stable output operation of the DC voltage E_i of the input smoothing capacitor C117 and in the neighborhood of the minimum level of the range, it is possible to realize the power failure sequence control surely and efficiently.



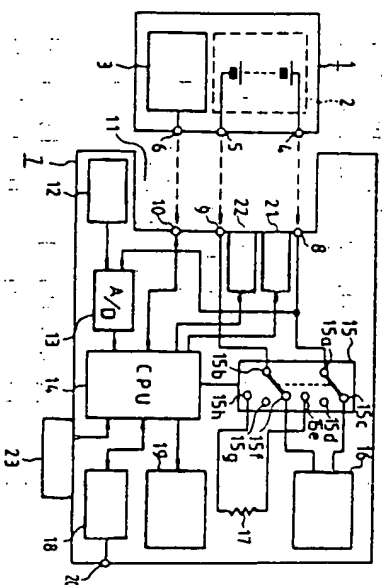
11: computer, 12: titled system device, 13: system managing system device, 14: power unit, 15: (main power source part) DC-DC converter, 21: first comparator, 22: second comparator, a: oscillation stoppage control signal, b: power failure detecting signal

(54) BATTERY DEVICE WITH NON-VOLATILE MEMORY

- (11) 1-59516 (A) (43) 7.3.1989 (19) JP
- (21) Appl. No. 62-217549 (22) 31.8.1987
- (71) SONY CORP (72) SHIGERU MORIKAWA
- (51) Int. Cl. G06F1/00, G01R31/36, G06F1/00, G11C17/00, H02J7/00

PURPOSE: To predict the service life of a battery, by performing the automatic measurement of the number of times of charging and a discharging characteristic, etc., calculating and displaying the capacity of the battery based on those data, and storing the data of the discharging characteristic and the capacity in a non-volatile memory at a battery side, in case of housing the battery in a housing space.

CONSTITUTION: The data of the number of times of charging stored in the non-volatile memory 3 is read out, and a prescribed load 17 is connected to a battery pack 1 when the data of the number of times of charging shows a prescribed number. In such state, the terminal voltage of the battery pack 1 is measured at a prescribed period, and such measurement is continued until the terminal voltage goes less than a reference value, and at a time when the terminal voltage drops less than the reference value, the prescribed load 17 is separated, and also, the capacity of the battery pack 1 is computed from measured data, and the measured data and the capacity are written on the non-volatile memory 3. In such a way, it is possible to predict the service life of the battery easily, and to use the battery economically and efficiently.



12: temperature sensor, 16: charging circuit, 18: interface, 19: display part, 21: heater, 22: cooler, 23: switch group